The Widom-Rowlinson model under spin flip: Immediate loss and sharp recovery of quasilocality

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Place **Campus Belval, MNO, E05-0515330 (5th floor)**

We consider the continuum Widom-Rowlinson model under independent spin-flip dynamics and investigate whether and when the time-evolved point process has an (almost) quasilocal specification (Gibbs-property of the time-evolved measure). Our study provides a first analysis of a Gibbs-non-Gibbs transition for point particles in Euclidean space. We find a picture of loss and recovery, in which even more regularity is lost faster than it is for time-evolved spin models on lattices.
We show immediate loss of quasilocality in the percolation regime, with full measure of discontinuity points for any specification. For the color-asymmetric percolating model, there is a transition from this non-almost sure quasilocal regime back to an everywhere Gibbsian regime. At the sharp reentrance time $t_G > 0$ the model is almost sure quasilocal. For the color-symmetric model there is no reentrance. On the constructive side, for all $t > t_G$, we provide everywhere quasilocal specifications for the time-evolved measures and give precise exponential estimates on the influence of boundary conditions.